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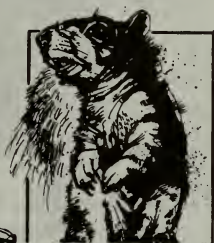
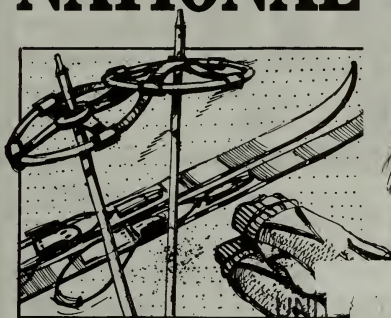
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SKI TOURING IN ROCKY MOUNTAIN NATIONAL PARK

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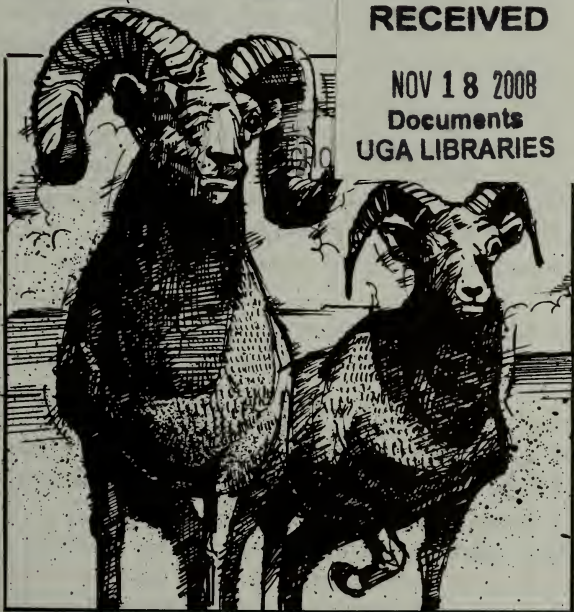
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For half the year, the glacially carved terrain of Rocky Mountain National Park offers many outdoor experiences for seasoned skiers. Moderate to deep snow fills most high valleys from December into May, and skiable spring snow covers much of the tundra. The snow is usually a dry powder through March, and many winter days are clear. Ski touring is fun, but it requires planning to have trips that are both safe and without impact on the land.

CARE OF THE ENVIRONMENT

All over night tourers must obtain a Backcountry Use Permit. The free permits and information can be obtained in person or by phone at Park Headquarters (303)586-2371 for east side tours, or at the Kawuneeche Visitor Center near Grand Lake (303)627-3471 for west side trips.

The following special restrictions apply to all winter use of the park:

Campsites must be more than 1 mile from any road and out of sight of both roads and trails to give both road and backcountry skiers a better experience.

Because some areas cannot absorb the concentrated pollution of human waste, and other areas are scientific or biological preserves, camping is not permitted at Bear, Nymph, Dream, Emerald, Gem or Poudre Lakes: at West Creek and Paradise Park, or on Specimen Mountain.

To preserve park resources, **wood fires are prohibited**. Tourers and climbers must carry stoves and fuel for cooking, snow melting, and emergencies.

Tree cutting is prohibited. Modern foam pads and air mattresses have made obsolete the practice of cutting limbs or boughs for beds or lean-tos.

Toilet sites (the hole dug in the snow) must be 100 feet away from streams, lakes, or natural drainages evident in the terrain or snowpack: they must also be away from trails or natural ski routes. It's worth the trouble to keep the outdoors clean.

Pack it in, then pack it out. Trash has no place in the wilderness. Leave no trace of your passing.

Dogs and other pets are permitted only in parking lots and on roads. They must always be leashed. Pets have a negative impact on wildlife.

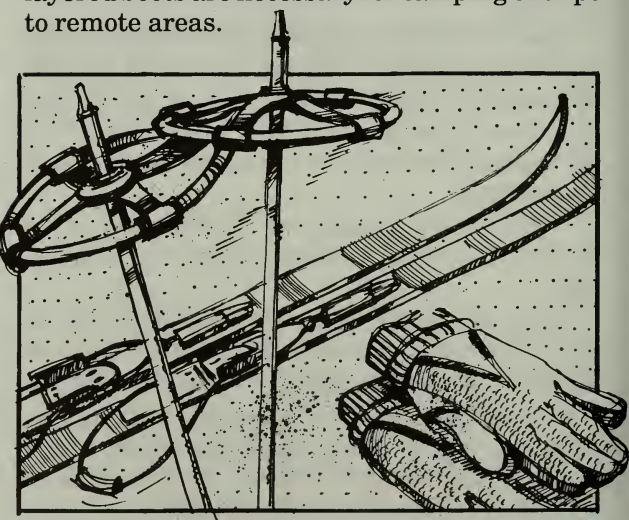
It is important to let someone, a friend or relative, know your intended plans and approximate time of return. In the event of a no-show, they can notify the park.

EQUIPMENT

Cross-country skis are best for most tours. The binding should allow easy heel lift. Steel edges are an asset for hard snow and essential on windpack or late spring crust. Poles should be long enough to prevent arm fatigue and should have large baskets. A spare ski tip and binding repair equipment should be carried for each three to four skiers.

Cross-country wax or climbing skins are used on most tours. For most conditions, the hard waxes (green, blue, purple, red) suffice: klister waxes provide better purchase on crust, but they can clog badly if snow conditions change. Fish-scale or patterned skis, requiring no wax, are also effective for touring, especially in spring snow.

Clothing should include poly-pro underwear, wool sweaters and trousers, wind pants and parka with hood, gaiters over boot tops, extra mittens and socks, a face mask, and goggles. Several layers of light, insulating clothing, removable according to conditions, are preferable to one heavy garment. A down jacket can be indispensable in an emergency, but it is too warm for trail travel. Wool hats and scarfs preserve valuable body heat. Heavier, multi-layered boots are necessary for camping or trips to remote areas.



Other knapsack items for day tours include: food, water, emergency rations, map, compass, whistle, flashlight, matches, a first aid kit, and an avalanche cord or beacon. Many tourers carry an avalanche shovel and a light-weight nylon or plastic tarp for improvising a simple but adequate emergency shelter.

WEATHER AND RESPONSE

Unpredictability is the key word for mountain weather in the Rockies. As a result, the Colorado mountaineer cannot be indifferent about the weather and is prepared for extreme conditions.

The Continental Divide, jutting into the prevailing west winds, is often capped by turbulent and wet storm clouds. The Bear Lake-Glacier Gorge region is often afflicted by poor weather, even when skies are clear a few miles to the east. Statewide weather trends announced in forecasts are nevertheless a valuable general guide to park weather, particularly for skiers planning extended tours.

Usual day temperatures vary from the low teens to the mid or high 20's. Night temperatures extend from the teens to well below zero. Cold fronts may lower temperatures to -30 degrees F., and the wind chill on exposed flesh can easily lower the effective temperature to -80 degrees F. Day tourers to open areas and all overnight tourers must be equipped to handle these polar conditions.

High winds, sometimes exceeding 100 mph, are perhaps the greatest single weather danger in the park. Above treeline, skiers may be blown off their feet, experience zero visibility, and have a total loss of orientation. Skiers enveloped in a "white-out" may be moving downhill and think they are standing still, or standing still and think they are moving. Skiers should stick close together and immediately retreat below treeline, cautiously probing for cornices, drop-offs and other unstable areas.

Fatigue, cold, and lost bearings, followed by panic, misjudgment, and physical collapse are sequences to which many winter travelers have fallen victim. Clearly, paying attention to the weather, the route, the ability and condition of each skier, and the daylight hours remaining will almost always prevent trouble.

An over-tired skier may be unable to restore body heat and is subject to hypothermia (lowered core body temperature). This is the killer known more commonly as "exposure". It can occur even under mild outdoor conditions. One of the best ways to prevent fatigue and hypothermia is to drink plenty of hot liquid in small portions throughout the day. Drinking two quarts of liquid per day is not drinking too much.

Nighttime snow illumination is extremely deceptive. Thus, a party overtaken by darkness should not continue unless the terrain is gentle, the return tracks clearly visible, and the remaining distance short.

Healthy adults can survive one night in the open under most conditions, and down jackets and space blankets can make a bivouac tolerable. Snow caves provide good shelter, but digging them may sacrifice energy and dry clothes. With an avalanche shovel and tarp, a covered trench shelter can be quickly built. Night temperatures a hundred feet or more up valley sides are often warmer than on valley floors where cold air currents flow.

Injured skiers should be given first aid and made warm and comfortable. They should not attempt to travel with painful and undiagnosed injuries. The leader should formulate explicit plans for getting help and tending to the victim. Members sent for help should not depart from the ascent routes and should exercise extreme caution in skiing, even at the expense of some lost time.

All accidents must be reported to the Park Headquarters, or any park employee as soon as possible.



AVALANCHES

Wise skiers are informed about avalanche mechanics, safe travel, and rescue procedures. Most avalanche victims trigger the slides in which they are caught.

The general rule for traveling in avalanche terrain is to avoid steep open slopes, gullies, slopes below cornices, drifted slopes, and other likely avalanche paths. Slopes between 30°-45° avalanche most frequently. Within the park, the chief avalanche areas are the headwalls and cirques along the Divide and adjacent ridges. Some of these contain immense snow deposits blown from wind-exposed areas. Most valleys in the park are safe, but even wooded slopes can slide. Small avalanches, running no more than 100 or 200 feet, kill more people than large spectacular avalanches.

About 80% of all avalanches occur during and shortly after storms. Snow falling at one inch per hour or faster is a sign of possible slide activity. Be extra cautious during these periods. Snow remains unstable under cold temperatures but tends to stabilize close to or just above freezing temperatures. Prolonged clear, cold weather, common early in Colorado winters, is a frequent cause of later avalanches, especially on north slopes. There are no obvious signs of this danger. Check with a ranger for past weather conditions as well as current forecasts.

As an extra precaution, look for old slide paths. Avalanches usually occur in the same areas each winter. Old slide paths are recognizable by pushed-over small trees and trees with broken-off limbs. Above treeline, steep, open gullies and slopes are always dangerous.

Listen for sounds. Hollow sounds in the snow, or snow collapsing under skis, particularly on leeward slopes, indicate that the conditions are probably dangerous. If the snow cracks and the cracks run, the danger of slab avalanche is high.

Watch for new avalanches. Avalanches in the vicinity indicate dangerous conditions. Beware when snowballs or "cartwheels" roll down the slope.

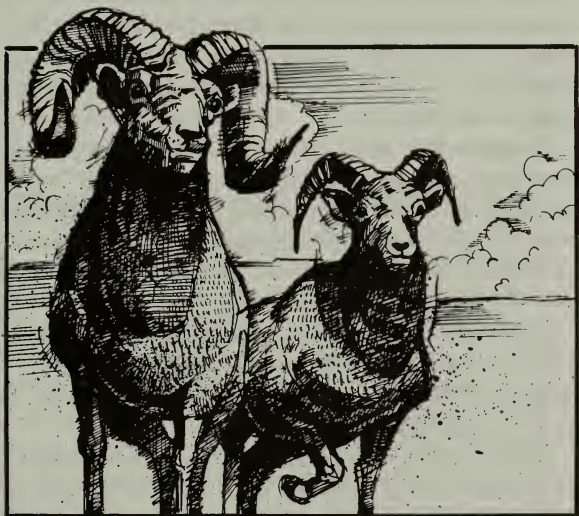
If you must cross an avalanche slope, remove wrist loops and footstraps, loosen your bindings and knapsack straps, and put on your hat, mittens, and hood. Turn on your avalanche transceiver. If you do not own a transceiver, have members of your party cross the slope one at a time with each person trailing a bright nylon avalanche cord. Use natural safety islands such as tree clumps and rock outcroppings. Watch each member to plot the course if he or she is swept away. Do not assume the slope is safe after the first member has crossed.

If you are caught in a slide, call out loudly and dump your poles, skis, and knapsack. Use a swimming motion to stay on the surface and work to one side. If you start to go under, cover your nose and mouth to create breathing space. Dig yourself upward and out. Avoid panic.

Review these procedures frequently to make the actions automatic if they are ever needed.

Check for further slide danger before you begin a search. Mark the point where the skier was last seen and search below that point by probing with the heel of a ski or an inverted ski pole. Make a careful search before going for help; chances for a victim's survival are only 50% after one-half hour. When victims are found keep them warm and treat for shock.

Each party should carry several small shovels for extricating avalanche victims.



TERRAIN AND ROUTES

Ski touring is relatively safe, unless enthusiasm or compulsiveness overrule judgment. Surprisingly, outright falling injuries are far less common than on developed downhill slopes, for cautious, controlled descents are the rule. Snowplow and kick turns are standard procedure. The easiest return route is usually in the ascent tracks.

Most routes follow summer trails, especially through dense forest. These are combined with independent ski routes to avoid hazards.

North-facing slopes offer the most snow, but also the most avalanche danger. South-facing slopes grow sticky in the sun and crusty in the

shade, a condition that can snap ski tips unexpectedly. Traverses between drainages are difficult because most valleys have steep glacier-cut walls. Rock out-crops sometimes require detours, even along valley floors.

Most areas of the park should be considered "ski mountaineering" rather than "ski touring" with steep climbs and descents, narrow routes, and sharp turns.

By midwinter, most stream courses are buried and provide relatively unobstructed travel. However, some pools may remain open, and snow on steep creek banks may slough away without warning. Small gorges and cascades, although ice-jammed and sometimes passable, should be avoided since the snow structures can collapse abruptly.

Despite the hard freeze of midwinter, lake crossings can be hazardous, particularly near inlets and outlets where ice is thin. Caution and constant testing by prodding with ski poles are necessary. Rescue procedures should be determined before a crossing is begun.

All areas of the park are mapped on standard U.S. Geological Survey 7½ minute quadrangles. These topographic maps are on sale at both park offices.

Solo touring should never be undertaken. The ideal party size is four to five persons. Smaller parties have inadequate strength for trailbreaking and emergencies. Larger parties are unwieldy and should break into fast and slow groups. Parties should begin and end their tours early to allow several hours of daylight for a safety margin.

All ski trails may be difficult to follow after a fresh snowfall, although experienced skiers will enjoy cross-country touring off the established trails. Those unfamiliar with the area are encouraged to ski on valley floors or to follow marked ski trails.

The park has enjoyable tours for skiers and snowshoers of all abilities when trips are well planned and undertaken with an eye on weather and snow conditions.

SUGGESTED TOURS

EAST SIDE

As in summer hiking, Bear Lake is the point of departure for many winter trips, short or long. Rangers are often on duty on weekends to provide assistance. Snow pack and conditions are usually more favorable at this elevation and higher. Although summer trails sometimes offer the best route, valley bottoms and stream beds have more snow cover and can be negotiated with care.

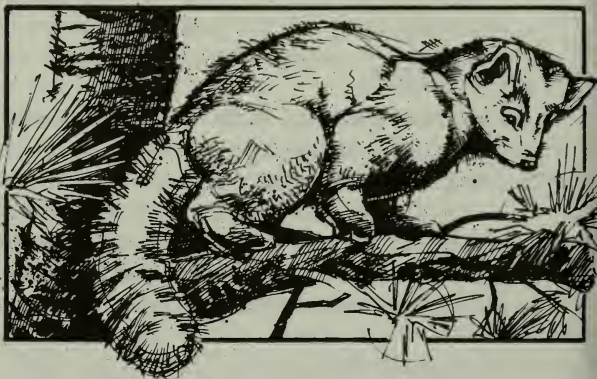
Nymph, Dream and Emerald Lakes

A leisurely one or two hour round trip to Nymph Lake involves a climb of several hundred feet. The summer trail from Bear Lake is the most common route. From the west shore of Nymph Lake an easy climbing route on the right side of the gully leads to Dream Lake $\frac{1}{2}$ mile farther (small avalanches can occur en-route). Emerald Lake, one mile beyond Dream, can be safely reached by traveling up the left side of the valley above Dream for several hundred yards, crossing to the right side of the valley through the trees in the flat area, then continuing west on the right side of the valley. Dream and Emerald Lakes are for experienced skiers.

Bear Lake to Hollowell Park

This is a one-way trip, one to three hours long. It has a short, steep climb, lots of downhill and some level touring. It is about $4\frac{1}{2}$ miles long. You will find fluorescent orange markers marking the route from the Bear Lake parking lot to the Hollowell Park meadow. Begin on the trail to Flattop Mountain. Where the summer trail turns left, or west, you instead turn right and descend through the trees, cross a plateau,

and go down another forested slope to an old logging road. A mile downhill on the road brings you to Mill Creek. Across the bridge the summer trail descends into Hollowell Park. This is a good trip for **advanced** beginners.



Glacier Gorge Junction to Loch Vale or Glacier Gorge

From the parking lot, follow the trail leading to Alberta Falls and Loch Vale. The trail above the falls is often windswept, and you may need to take off your skis and walk for a quarter-mile. An alternate route for intermediate or experienced tourers is to turn right and go up a small valley at the second bridge, about $\frac{1}{4}$ mile in from the trailhead. Little pitches and hills lead up the valley to the Loch Vale-Glacier Gorge trail junction. Beyond this, the streambed up to the Loch offers a snowier route than the steep, windswept summer trail, but stay on the right side as the stream is sometimes undercut. Allow 4 to 6 hours for this round trip. Beginning skiers will like the trail to Alberta Falls.

The route to Glacier Gorge turns left several hundred yards beyond the Loch Vale-Glacier Gorge trail junction (past the hitching rack). Beyond the wooden trail bridge, you will be on the summer route to Glacier Gorge and Mills Lake. This can involve steep slopes. Allow four to six hours for this round trip. Beginners will have difficulty with steep climbs and descents above the wooden bridge.

Bear Lake to Fern Lake and Moraine Park

This is a 10-mile trip for experienced ski mountaineers in excellent condition. All equipment should be tested. Parties attempting this one or two-day tour should have equipment repair material, sufficient items for an emergency bivouac, and adequate clothing for severe wind and low temperatures. The first 1½ miles of the route from Bear Lake is marked with fluorescent orange markers to ¼ mile east of Marigold Pond.

Turn left at the junction ¼ mile from Bear Lake, then follow the trail to the top of the ridge and continue west. Use a topographic map and compass for the rest of the trip. Follow the broad valley to the north and stay on the right side of the stream. To reach Two Rivers Lake, work your way to the left as you reach the upper part of the valley. The summer trail on the left side of the valley can be followed, but some of it is on a steep slope and the snow cover is often poor. It can be an area of avalanche danger.

Cross Two Rivers Lake, after testing the ice, and ski the short distance west down to Lake Helene. To its right appears Odessa Gorge. Ascend the ridge between Lake Helene and Odessa Gorge for a short distance, to the first small break in the ridge line. Traverse to the right as you descend, staying out of any avalanche chutes. Look uphill to check hazards. Some prefer to take off their skis and walk straight down the slope. Heavy snowfalls, threatening masses of unsettled snow, warrant aborting the trip down and turning back. Once down, the right side of the valley leads naturally to Odessa Lake.

Beyond, follow the narrow gorge, staying to the right of the streambed for a quarter of a mile. Cross the stream at a safe place, then follow it down on the left side, bending slightly away to the left as you do.

Overnight bivouacs at Fern Lake are less windy than at Odessa. Below Fern Lake, the balance of the route follows the summer trail

down to The Pool bridge. Beyond, the trail to Moraine Park is often dry in places; agile parties ski on the Big Thompson River ice to the trailhead.

Glacier Gorge Junction to Sprague Lake

Intermediate. This one way, one to three-hour trip follows the summer trail on the south side of Glacier Creek. The trail turns left after crossing the first bridge, and contours above the valley floor to a large beaver pond. Here the trail cuts back around the east end of the pond and drops down to the valley. Three miles of gentle downhill skiing bring you to Sprague Lake. Another mile of easy going leads to Glacier Basin Campground.

Glacier Basin and Sprague Lake

Beginner. The gentle rolling terrain between Glacier Basin and Sprague Lake is ideal for the beginning skier. A two-mile round trip can be made through the campground and across some beaver ponds to Sprague Lake. Continue above the lake to the Boulder Brook trail junction and return along the Glacier Creek trail as it contours above the valley floor. The snow may be patchy in poor seasons.

Wild Basin

Lower Wild Basin offers level ski touring and few avalanche hazards. Beyond it, there are many opportunities for wilderness touring. Above treeline, precipitous slopes present many slide paths. Wild Basin trips usually begin near Copeland Lake at the winter parking area. Follow the snow-covered road or the phone line to the Wild Basin summer trailhead. The summer trail leads tourers to Ouzel Falls and Thunder Lake. February and March snow cover often permit use of a route to Thunder Lake that is lower than the trail. It leads in on the right side of the St. Vrain River, beginning a short distance above the upper wooden bridge, about 3½ miles in from your starting point.



WEST SIDE

East Inlet

Intermediate to Advanced. Follow the "tunnel road" to its end near the eastern shore of Grand Lake. Ski east past Adams Falls ($\frac{1}{2}$ mi. up trail) and into the first meadow. Here you may depart from the trail and ski out across the meadow, through the trees, or along the frozen river into the second meadow. After the initial two miles, the route steepens to challenge the expert skier.

North Inlet

Beginner to Advanced. From the parking area along the "tunnel road" north of town, trek uphill, turn right at the water works building, and continue to Summerland Park. For $1\frac{1}{2}$ miles, this route is shared with snowmobilers. Beyond Summerland Park there is ski or snowshoe travel only, with a mild incline steepening on your approach to Cascade Falls, $3\frac{1}{2}$ miles from the trailhead.

Tonahutu Creek Trail

Beginner to Intermediate. Leave your vehicle at the Kawuneeche Visitor Center, and ski east, away from the parking lot, for an easy two-mile trip down to Grand Lake. For the more energetic, a popular destination via this trail is Big Meadows, four miles from the Visitor Center. This has an elevation gain of 700 feet.

Green Mountain Trail

Beginner to Advanced. This trail, 3 miles north of the Visitor Center, offers the shortest route to Big Meadows (2 miles). Another trip from here is an all-day loop, made by traveling down Tonahutu Creek to the Visitor Center. Beginners, however, will find the best terrain on the valley floor. Park at the same trailhead, but cross the road and ski past the cabins and into the meadow. Park land lies both to the north and south in this part of the valley.

Onahu Creek Trail

Advanced. Combine this with the Green Mountain Trail route for a half- to all-day loop trip. This is especially difficult between Big Meadows and Onahu Creek. Take a Grand Lake Quadrangle topographic map.

Valley/River Loop Trail

Beginner. This 2 1/2 mile loop is mostly flat with a few short inclines. Park at Harbison Picnic Area 1 mile north of Visitor Center. The trail begins west of the picnic tables and can be skied in either direction in a few hours. The trail follows the Valley Trail through the woods before connecting with the River Trail. The River Trail stays by the Colorado River for a mile before connecting to the Valley Trail. Be sure to look for orange markers at trail junctions.

Colorado River Trail

Beginner to Advanced. Park at Timber Lake trailhead (end of plowed road) and ski off the road to the left. Follow the markers directly north along the river. Ruins of miner cabins are found two miles from the trailhead, and two miles further is the site of Lulu City, a former mining boom town. Beyond here, the trail steepens. The advanced skier, prepared for winter camping, may proceed another four miles upriver to La Poudre Pass, at 10,000 feet. Enroute, you top out at the Grand Ditch, which leads to other skiing opportunities. These routes involve overnight camps.